Challenge TB - Tajikistan

Year 2

Annual Report

October 1, 2015 – September 30, 2016

November 5, 2016

Disclaimer

Table of Contents

List of Tables

List of Figures

List of Abbreviations and Acronyms

aDSM system	Active drug safety monitoring and management system
AE	Adverse event
APA 2	Annual Plan of Activities for year 2
BDQ	Bedaquiline
CIS	Commonwealth of Independent States
Cfz	Clofazimine
CTB	Challenge TB
DOTS	Directly Observed Treatment Short course
DRS	Drug Resistance Survey
DR-TB	Drug Resistant TB
DLM	Delamanid
LMIS	Logistic Management Information System
FLD	First Line Drugs
HC	Health Center
HIV	Human Immunodeficiency Virus
Global Fund	The Global Fund To Fight AIDS, Tuberculosis and Malaria
KNCV	The KNCV Tuberculosis Foundation
LMIS	Logistic Management System
LIMS	Laboratory Information and Management System
Lzd	Linezolid
SL LPA	Second-line lineprobe assays
MDR-TB	Multidrug Resistant TB
M&E	Monitoring and Evaluation
MSF	Médecins Sans Frontières
MOHSPP RT	Ministry of Health and Social Protection of Population of the Republic of Tajikistan
NDs and SR	New Drugs and Shorter regimen
NFM	New Funding Mechanism
NRL	National Reference Laboratory
NTP	National Tuberculosis Program
NSP	National Strategic Plan
OR	Operations Research
PHC	Primary Health Care
PMDT	Programmatic Management of Drug Resistant TB
PR	Principal Recipient
PV	Pharmacovigilance
RRS	Rayons of Republican Subordination
RTBC	Republican TB Control Center
SLD	Second Line Drugs
TB	Tuberculosis
NFM	New Funding Mechanism
SOP	Standard Operating Procedure
USAID	United States Agency for International Development
XDR-TB	Extensively drug-resistant TB
Xpert MTB/RIF	An automatized cartridge-based test for MDR TB diagnostics
WHO	World Health Organization

1. Executive Summary

In Tajikistan, KNCV Tuberculosis Foundation (KNCV) started implementation of the USAID funded Challenge TB (CTB) project in January 2015. The project provides technical support to the National Tuberculosis Program (NTP) in preparation for programmatic implementation of new drugs and shorter regimen for treatment of drug resistant tuberculosis in the context of the National Strategic Plan (NSP) for 2015-2020.

The project is implemented in the framework of the Memorandum of Understanding between KNCV Branch office in Tajikistan and the Ministry of Health and Social Protection of Population of the Republic of Tajikistan (MOHSPP RT). For the purpose of sustainability and capacity building CTB works in close collaboration with NTP, WHO Country Office, international partners and projects: USAID TB Control Program (led by Project HOPE), NFM/Global Fund (with two Primary Recipients (PRs): the Republican TB Control Center (RTBC) and Project HOPE) and Médecins Sans Frontières (MSF). In APA2, USD 500,000 was obligated to support Tajikistan via CTB.

The main interventions of CTB in Year 2 were: 1) creating conditions required for appropriate enrolment of patients on shorter and treatment regimens containing new drugs; 2) introducing active drug safety monitoring and management system (aDSM) 3) developing clinical guide and protocols and 4) improving TB drugs management through building NTP's capacity and implementation of Early Warning System by using QuanTB at the central and regional levels. By the end of the project we expect to establish national policy framework and build capacity of the NTP for implementation of the new regimens, and enroll 450 eligible patients from CTB sites on treatment with Bdq and 600 eligible RR-TB patients on the shorter treatment regimen. An Early Warning System (QuanTB) will be established and successfully operational at the regional level to prevent shortages of anti-TB drugs at the all levels of the drug supply chain. The project also will introduce and expand SL-LPA for detection of resistance to SLDs throughout the country.

All interventions and activities planned in year 2 have been completed: selected sites for piloting new drugs and shorter regimen, developed policy and regulatory basis for implementation of new regimens, including clinical protocols and aDSM regulations, updated recording and reporting forms as well as trained TB specialists, key staff of State Pharmaceutical Control Service and Treatment Consilium members.

In Y2 CTB activities were implemented in two project sites: Dushanbe city, capital of Tajikistan with 802,100 population and Rudaki District with 463,100 population. 14 health centers (polyclinics with DOTS rooms) in Dushanbe, 3 DOTS centers in Rudaki and M/XDR-TB Wards in National TB and Pulmonology Center (Republican TB Hospital Machiton) were covered.

Key CTB achievements in Year 2 are the following:

- ✓ The National Plan on Introduction of New Drugs and Shorter Regimen for Drug Resistance TB Treatment in Tajikistan approved by the MoHSPP RT in April 2016.
- ✓ The Clinical protocols on the use of new drugs and shorter Regimen and SOPs describing the procedures related to case finding and diagnosis at the PHC and TB services, patients triage, designing treatment regimens, monitoring of treatment effectiveness and drugs safety developed and submitted to MoHSPP RT for approval.
- ✓ The existing diagnostic algorithm was optimized for CTB pilots to allow triaging of patients to be enrolled on new regimens for treatment of M/XDR-TB. Standard Operational Procedures (SOP) on sputum collection, sputum transportation and reporting results of laboratory tests were developed for pilot facilities and respective health staff was trained.
- ✓ With support of CTB, NTP started implementation of selected intermediate aDSM package (Monitoring of serious adverse events (AE) and AE of special interest), including development of aDSM regulations and relevant recording and reporting forms.

6

- ✓ Key specialists from the national and project sites' levels trained on clinical aspects of implementation of new regimens for treatment of M/XDR-TB. Thus, 228 health providers (110 males and 118 females) from national and project sites levels including TB and PHC physicians and nurses, laboratory specialists, Consilium members, and representatives of State Pharmaceutical Control Service were trained in clinical management of patients with DR-TB, aDSM, psychological and social support. Please see Table 1. Training Data in Section 3 below.
- ✓ 108 drug management specialists (49 males and 59 females) benefited from LMIS and QuanTB trainings facilitated by the CTB. Please see Table 2. Training Data in Section 3 below.

In Y2 CTB established the platform for effective introduction of new regimens and ready to enroll DR-TB patients into the treatment with arrival of the drugs to the country. The drugs are procured by NFM of the GF (project HOPE) and delivery is expected by December 2016.

CTB anticipates continuing interventions started during year 1 and 2 related to introduction of new drugs and shorter regimens. In addition, in Y3 CTB will support introducing SL-LPA, optimization of Laboratory Information Management System for Tajikistan and implementation of e-LMIS for FLD and SLD.

2. Introduction

Tajikistan is one of the five Commonwealth of Independent States (CIS) countries in Central Asian region having borders with Kyrgyzstan, Uzbekistan, Afghanistan, Pakistan and China. The country has five administrative regions: Gorno-Badakhshan Autonomous Oblast (GBAO), Sughd and Khatlon oblasts, Rayons of Republican Subordination (RRS) and the capital city of Dushanbe. According to official statistics in 2015 the population of the Republic of Tajikistan was 8.482 million[1], with almost three-fourths of the country's population living in rural areas. CTB geographic areas include two pilot sites: Dushanbe, the capital of the country and Rudaki District with a total population 1.265 million[2].

According to the NTP statistics, a total of 6,307 TB cases of all forms, were registered in the country in 2015 (including penitentiary sector); and out of these, 5,065 (80.3%) were new cases. The disease affects mainly young and productive populations: according to NTP in 2015 70% of all new TB cases were registered in the age group of 15 - 44 years old, 546 new cases of TB were identified in children (from 0 to 17 years) which already is 10.7% of new TB cases (n=5102) in the country. Between 2011 and 2014, the total number of TB notifications decreased by 10% but the proportion of drug resistant TB (DR-TB) cases is increasing. This is mainly related to the improved diagnostic capacity due to the implementation and scale up of rapid tests such as LPA, Xpert MTB/RIF and due to the scale-up of the MDR-TB program.

The high burden of anti-TB drug resistance is one of the key challenges in Tajikistan. According to the national DRS (2009-2010), MDR-TB was reported in 12.5% of new TB cases and 53.6% of re-treatment cases. Amongst those MDR-TB cases tested for resistance to SLDs, 10% were found to be extensively-drug resistant XDR-TB. Since 2009, step-wise implementation of MDR-TB treatment was started in Tajikistan and by the end of 2014 it was expanded throughout the country. In the period of 2009 to 2015, in total 3367 MDR-TB patients enrolled to treatment with Second Line Drugs (SLD).

According to the Tajikistan National Strategic Plan, over the next years (2015-2020), about 42,870 of all forms of TB cases will need anti-TB treatment in Tajikistan. Out of these, over 5,840 (13.6%) cases are expected to have advanced drug resistance (M/XDR-TB) and will thus require Second Line and Third Line anti-TB drugs. The approaches currently used for treatment of MDR-TB patients require a long-term period (20 months and more), are difficult to implement and also require high financial and human resources. It is also very difficult for patients to accept the hardship to tolerate treatment for the duration of two years. High levels of treatment interruption and patients reported as *lost to follow-up* are adversely affecting the final treatment outcomes, and leading to the development and spread of extensively resistant TB. In 2013 to early 2016, 384 patients identified with pre- and XDR-TB. However, the country in that time could not respond to this challenge because the NTP did not have the capacity to manage such cases as well as unavailability of new and repurposed drugs. Out of this number, 62 died, 64 could not be enrolled, 198 enrolled on less effective standard SLD treatment regimen. Only a small portion of patients was enrolled on treatment with Bedaquiline (BDQ) (0.4% -15 patients, supported by MSF) and repurposed drugs such as Lzd and Cfz (12% - 45 patients).

Taking into account the above mentioned, the 5-year strategy of CTB in Tajikistan is to improve capacity and quality of care for drug-resistant TB patients with the focus on new tools and innovations. KNCV Tuberculosis Foundation is the leading partner of the project in Tajikistan. CTB works in close collaboration with MOHSPP RT, National TB Control Program, USAID, Project HOPE, MSF, WHO Country Office and Global Fund's NFM projects.

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[1] State Center of Statistic, January 2015
[2] Source: 2016 Statistics Agency Report (www.stat.tj).

CTB activities in Tajikistan implemented under specific sub objectives of following two objectives:

Objective 1. Improved Access. Sub-objective 3. Patient-centered care and treatment
Objective 3. Strengthened TB Platforms. Sub-objective 9. Drug and commodity management systems.

The priority areas of CTB project were to establish a platform for enrolment of patients on treatment regimens conaining new drugs and shorter regimen based on patient centered approach including introduction of aDSM, development of clinical protocols and guides. Another priority is to improve TB drugs management through building NTP's capacity and implementation of Early Warning System by using QuanTB at the central and regional levels.

In year 2, all planned interventions have been completed. Thus, the pilot sites for implementation of treatment regimens containing new drugs and shorter regimen were selected, policy and regulatory basis for their introduction developed, diagnostic algorithm optimized, respective clinical protocols and SoPs developed for practical use, aDSM package identified, aDSM Regulations including recording and reporting forms developed, health providers trained including key staff of State Pharmaceutical Control Service and Consilium members.

CTB activities were implemented in two project sites: Dushanbe city, capital of Tajikistan (covering 14 health centers (polyclinics with DOTS rooms), and Rudaki district (covering 3 DOTS centers) and the National TB and Pulmonology Center (MDR-TB and XDR-TB departments).

3. Country Achievements by Objective/Sub-Objective

CTB activities in Tajikistan were implemented under two objectives:

- Objective 1. Improved Access. Sub-objective 3. Patient-centered care and treatment
- Objective 3. Strengthened TB Platforms. Sub-objective 9. Drug and commodity management systems.

Objective 1. Improved Access

Sub-objective 3. Patient-centered care and treatment

In Year 2, CTB continued support implementation of shorter regimens and new drugs in the context of national TB control program. The CTB geographic areas selected: Dushanbe city with its 14 health centers with DOTS rooms, Rudaki District with its 3 DOTS centers. The National TB, Pulmonology and Thoracic Surgery Center as key hospital for M/XDR-TB patients is also included into CTB pilots. Key CTB activities focused on creating a favorable legal and regulatory environment for implementation of NDs and SR; developing aDSM system and building of capacity of TB and PHC staff in the project sites on clinical aspects of NDs and SR implementation.

Key partners are NTP and State Pharmaceutical Control Service of the MoHSPP RT, NFM/GF grants, and other partners involved in introduction of new regimen (MSF).

Key achievements of the Year 2 are following:

- ✓ In April 2016, the MOHSPP RT approved the National Plan on Introduction of New Drugs and Shorter Regimen for Drug Resistance TB Treatment in Tajikistan (MoHSPP RT Order # 285 dated in April 21, 2016). The document was developed with support of CTB project and was an important step to move forward implementation of innovative approach for diagnosis and

treatment of the most severe TB cases as well as non-complicated MDR-TB cases. CTB will enroll patients to new drug and shorter regimen treatment in December 2016 along with shipment of new and repurposed drugs to Tajikistan under NFM/GF TB grant.

✓ The Clinical protocols on the use of new drugs and shorter regimen were developed in close collaboration with NTP' key clinical specialists and CTB consultants from KNCV Central and Regional Offices. The Clinical protocols describing the procedures related to case finding and diagnosis at the PHC and TB services, patients triage, designing treatment regimens, monitoring of treatment effectiveness and drugs safety. The Clinical protocols are cleared by the NTP and pending the approval of the MoHSPP RT.

✓ The diagnostic algorithm was optimized for CTB pilot sites to allow triaging of patients to be enrolled on new regimens for M/XDR-TB treatment. Standard Operational Procedures on sputum collection, sample transportation and information exchange were developed and respective health staff trained. Detailed structure of sputum collection and transportation for CTB pilots was developed as shown in Figure 1 and 2 below.

✓ Created basis for implementation of aDSM system that includes development of aDSM guideline, recording and reporting forms and design of aDSM/PV module for e-TB Register (OpenMRS).

✓ Identified model for baseline and follow up clinical and laboratory examinations for clinical management of drug safety in patients enrolled on new regimens in the project sites based on the results of conducted inventory assessment of available clinical and laboratory capacity. Next to the public health facility and laboratory, the model includes also private laboratory (DiaMed).

✓ In Year 2 CTB contributed to building local capacity in respective topics: clinical management of patients with DR-TB enrolled on shorter regimen and new drugs, aDSM, psychological and social support. In total 228 health providers including TB and PHC physicians and nurses, laboratory specialists, Consilium members and representatives of State Pharmaceutical Control Service were trained.

✓ CTB contributed to improvement of diagnostic capacity for clinical and laboratory monitoring of adverse events. Project supported procurement of necessary equipment (ECG machines, ultrasound scan, Audiographs, nigotoscops, Highmeters, mechanical scales).

Photo 1. Group work during Cohort analysis Workshop, May 05, 2016, Dushanbe

Figure 1 Sputum Transportation Scheme in Dushanbe

National Public Health Laboratory (XpertMTB/RIF and culture)

NRL (Machiton)

City TB Center Dushanbe

HC#1
HC#3
HC#2
HC#7
HC#14
HC#13
HC#6
HC#8
HC#12
HC#5
HC#10
HC#9
HC#4
HC#11

Sputum collection points at health centers

Microscopy laboratory
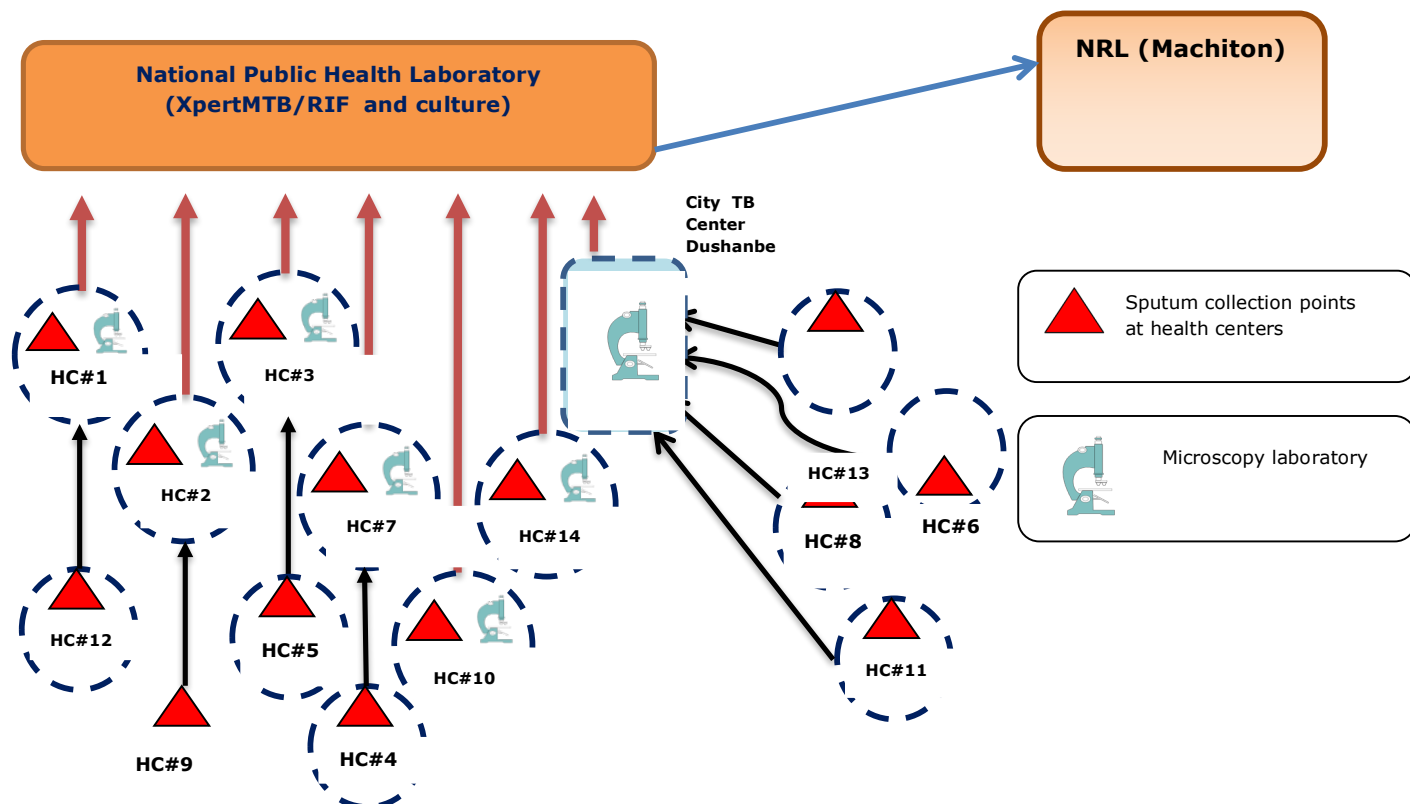
Figure 2 Sample Transportation Scheme in Rudaki District

NRL Machiton

National Public Health Laboratory
XpertMTB/RIF and culture

DOTS-1 — Chimtepp, Choryako, Sarikisl, Navobod, Chortepp

DOTS-2 — Sultonob, Ishkobod, Somoniy, Esanboy, Chorgul, Lohur

DOTS-3 — Zainab, Rohati, Russia, Kibali, Guliston

△ Sputum collection points

🔬 Microscopy labs in DOTS

Table
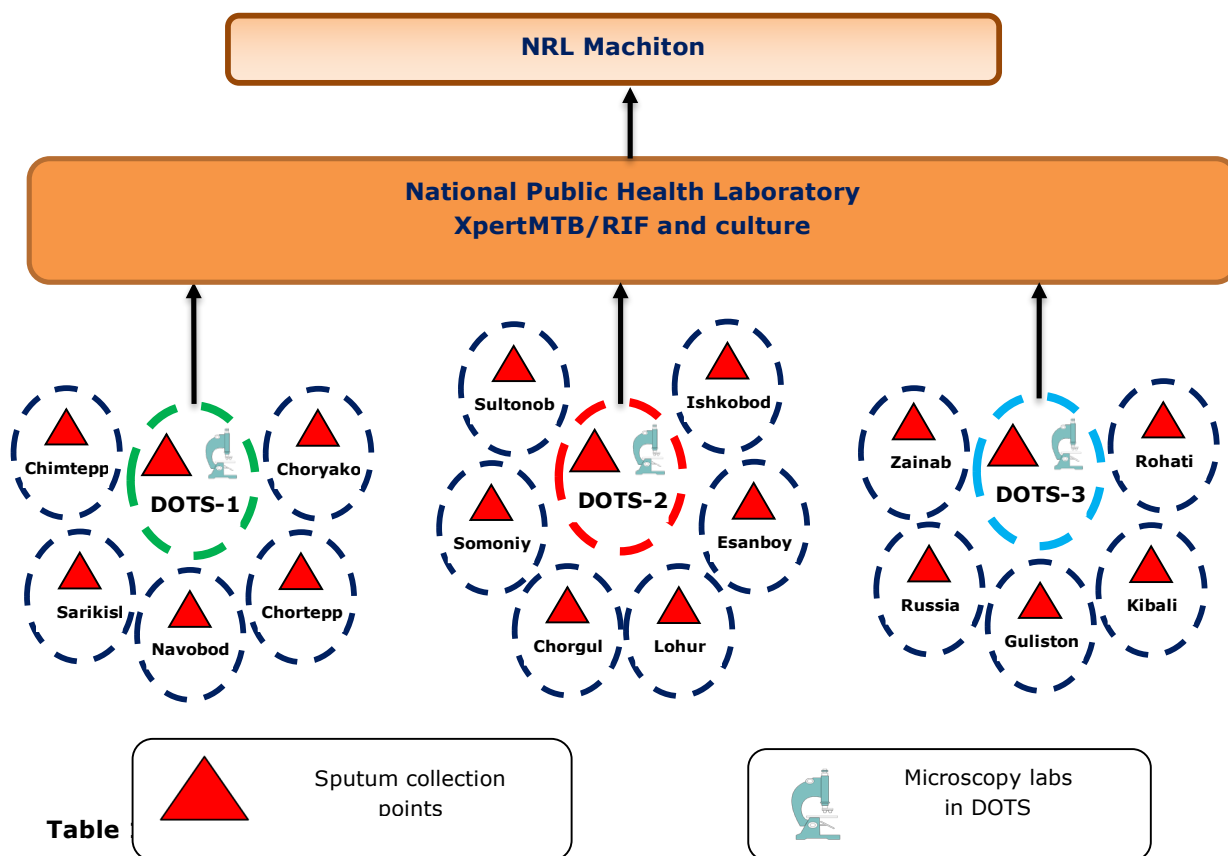
Code of activity	Name of Training/Workshop	# of trained specialists		
		male	female	Total
3.2.2	Workshop on Development of the Clinical protocols for treatment with shortened regimens and with regimens containing new TB drugs	11	9	20
3.2.3	Workshop on Optimization of the diagnostic algorithm	11	10	21
3.2.5	Workshop to design operational research protocol for implementation of shortened treatment regimens based on optimized diagnostic algorithm and developed clinical protocol	11	9	20
3.2.6	Trainings for TB and clinical laboratories on developed SoP	6	12	18
3.2.7	Training for TB clinicians on developed SoP	9	8	17

#		Baseline	Target	Result
3.2.8	Training for TB specialists and nurses on clinical management of the M/XDR- TB cases treated with shortened regimens and regimens containing new anti-TB medicines including clinical monitoring of side effects	11	16	27
3.2.9	Training for members of Central Consillium on patient selection for the new regiments and new drugs	15	4	19
3.2.11	Psychosocial support program for patients on shortened regimen and new drugs	5	16	21
		2	16	18
3.2.13	Study tour of NTP specialists to existing short regimen, new drug pilot sites in other countries (Latvia)	3	2	5
		4	0	4
3.2.18	PV workshop for member of PV thematic working group, and NTP, PV department of DRA, clinicians	10	9	19
3.2.20	PV training for members of PV TWG and causality assessment sub-group	12	7	19
TOTAL # of trained under sub-obj.3		110	118	228

Key Results

Table 2 Sub-objective 3. Patient-centered care and treatment

#	Outcome Indicators	Indicator Definition	Baseline (Year/ timeframe)	Target Y2	Result Y2
	3.1.1. Number and percent of cases notified by setting (i.e. prisons, etc.) and/or population (i.e. gender, children etc.) and/or case finding approach	Description: The number of TB cases all forms (i.e. bacteriologically confirmed plus clinically diagnosed, new and relapse) reported by the NTP disaggregated by setting (gender, children, prison) Indicator Value: Number and where available, percent Level: National and CTB geographic areas Numerator: Number of TB cases all forms (bacteriologically confirmed + clinically diagnosed; includes new and relapse cases) reported (by setting/	2014	General population - 6,260 (M-3,478, F-2,782) Prison - 160 (M-158, F - 2) Civilian population: 6,100 (M - 3,320, F - 2,780) Children - 481	General population 6,372 CTB area 963 (Dushanbe 584, Rudaki 379)

		population/ case finding approach) nationally and in CTB geographic areas in the past year Denominator: Total number of TB cases (all forms) notified nationally and in CTB geographic areas			
	3.1.4. Number of RR-TB or MDR-TB cases notified	Description: Total number of bacteriologically confirmed MDR-TB cases diagnosed. Project should follow the MDR-TB/Xpert algorithm in country regarding whether Rifampicin-resistant TB cases (RR-TB) should be counted as confirmed MDR-TB. If a country's algorithm states that a RR-TB cases is automatically assumed to be MDR-TB (i.e. no further DST required), then RR-TB should be included in the number of confirmed MDR-TB cases diagnosed. Otherwise, RR-TB should be excluded until proven via further DST that the case is a confirmed MDR-TB case. Indicator Value: Number Level: National and CTB geographic areas Numerator: Number of bacteriologically confirmed MDR-TB cases diagnosed during the reporting period	2014	detected 902; CTB area (2014) - 98 detected	582 (National, Jan-Mar 2016) 107 (CTB area, Jan-Mar 2016)
	3.2.1. Number and percent of TB cases successfully treated (all forms) by setting (i.e. private sector, pharmacies, prisons, etc.) and/or by population (i.e. gender, children, miners, urban slums, etc.).	Description: The proportion of a cohort of TB cases (all forms, bacteriologically confirmed and clinically diagnosed, new and relapse) registered in a specified period that were successfully treated, whether with bacteriologic evidence of success ("cured") or without ("treatment completed") by setting (i.e. private sector, pharmacies, prisons, etc.) and/or by population (gender, children, miners, urban slums, etc.) and/or risk population groups defined by national policy (IDUs, diabetics, prisoners,	2013	Children: Treatment success: 213/221 (96.4%) Adults: Treatment success: 5069/5811 (87.2%) Prisoners: Treatment success: 107/122 (87.7%)	National data for cohort of 2014: General: 5105/5798 (88.05%), Prisoners: 112/126 (89%) Children: 556/573 (97 %) CTB area data for 2014

		etc.). There may be overlap between settings and groups. Disaggregation by risk population is required in contexts where CTB is providing treatment support for a specific group according to the annual work plan or in contexts where operations research allows for disaggregation and comparison across groups. Indicator Value: Percent Level: National and CTB geographic areas Numerator: Number of new and relapse TB cases (all forms) registered in a specified period that were cured or completed treatment Denominator: Total number of new and relapse TB cases (all forms) registered in the same period				cohort: 713/812 (87.8%): Dushanbe - 88.8% (435 out of 490) and Rudaki district - 86.3% (278 out of 322) – Children (Dushanbe and Rudaki): 111/113 (98.2%)
	3.2.4. Number of patients started on MDR-TB treatment	Description: The number of bacteriologically confirmed, clinically diagnosed or unconfirmed MDR-TB cases started on second-line treatment during the reporting period. Unconfirmed MDR-TB cases are those awaiting C/DST results. RR-TB may fall under confirmed or unconfirmed depending on the country's MDR-TB diagnosis algorithm. Indicator Value: Number Level: National and CTB geographic areas Numerator: The number of confirmed or unconfirmed MDR-TB patients started on second-line treatment in the reporting period	2014		National (Y 2014) - 804 out of 902 detected (89%); CTB area (2014) - 91	582 (National, Jan-Mar 2016) 107 (CTB area, Jan-Mar 2016)

| | 3.2.7. Number and percent of MDR-TB cases successfully treated | Description: The proportion of confirmed MDR-TB patients successfully treated (cured plus completed treatment) among those enrolled on second line TB treatment during the reporting period (where applicable disaggregation by HIV status, XDR status). RR-TB may fall under confirmed MDR-TB depending on the country's MDR-TB diagnosis algorithm.

Indicator Value: Percent

Level: National and CTB geographic areas

Numerator: Number of confirmed MDR-TB cases successfully treated (cured plus completed treatment)
Denominator: Total number of confirmed MDR-TB patients enrolled on second line TB treatment during the reporting period. | National (Y 2011) - 250 (65.8%); CTB area (2012) - 60 (66.6%) | National - 66%

CTB – 67% | National 2013 cohort – 408 out of 668 (61.1%)

CTB areas (2013) - 61.5% (83 out of 135). Dushanbe - 65.1% (56 out of 86), Rudaki district - 55.1% (27 out of 49) |
| | 3.2.8 #/% of PMDT sites reporting on treatment cohort status quarterly | Description: Number of PMDT sites reporting on treatment cohort status quarterly among total number of PMDT sites

Indicator Value: Number and percent

Level: CTB geographic areas

Numerator: Number of PMDT sites conducting treatment cohort analysis meeting and report on results on specific period (quarterly)

Denominator: Total number of PMDT sites | n/a | 1/2 (50%) | 2/2 (100%) |

	3.2.10 #/% planned cohort review conducted	Description: Number of PMDT sites conducted treatment cohort analysis Indicator Value: Number and percent Level: CTB geographic areas Numerator: Number of PMDT sites conducting treatment cohort analysis meeting and report on results on specific period (quarterly) Denominator: Total number of PMDT sites	n/a	4	3/4 (75%)
	3.2.35 # of patients with non-complicated MDR-TB enrolled for treatment with shortened 9 months regimen	Description: Number of patients with non-complicated MDR-TB enrolled for treatment with shortened 9 months regimen among all MDR-TB patient registered in one year period Indicator Value: Number Level: CTB geographic areas	n/a	10	0 Enrolment of MDR-TB patients was not possible due to delays in the procurement of drugs by NFM/GF/NTP
	3.2.36 # of patients with pre-XDR TB and XDR-TB enrolled for treatment with regimens containing new TB drugs	Description: Number of patients with pre-XDR TB and XDR-TB enrolled for treatment with regimens containing new TB drugs registered in one year period Indicator Value: Number Level: CTB geographic areas	n/a	10	0 Enrolment of MDR-TB patients was not possible due to delays in the procurement of new drugs by NFM/GF/NTP

Objective 3. Strengthened TB Platforms

Sub-objective 9. Drug and commodity management systems

Under this Sub-objective CTB in Tajikistan focused on improvement of TB medicines' management through building NTP's capacity on drug management and implementation of an Early Warning System by using QuanTB at the central and regional levels. Implementation of the QuanTB tool has a crucial role for the country at this stage with increasing number of DR-TB patients and transition from standardised to more individualized treatment schemes. This tool is designed to follow up the balance of stock and to calculate needs electronically for DR-TB patients on different treatment regimens. During the reported period, CTB supported the training of regional drug management specialists (see table 2 for details on trainee numbers). The skills of trained specialists on QuanTB regularly assessed during monitoring visits by CTB specialists jointly with the NTP drug coordinator.

In Y2, CTB also continued improving capacity of regional and district level drug management specialists on updated Logistic Management Information System (LMIS). Within the project in Y2 five trainings on LMIS were conducted and 87 (47 females and 40 males) specialists from Dushanbe, Soghd, Khatlon and GBAO regions were trained. TB managers and drug management specialists improved their knowledge on LMIS for FLD and SLD including proper maintenance of revised recording and reporting LMIS forms, development of drug requisition (order), stock management, drug needs forecasting and quantification. Monitoring and on-job-trainings were provided on quarterly basis on introduction of QuanTB at regional level as well as recording and reporting.

According the findings of monitoring and QuanTB assessment there was no stock out in the country in Year 2.

Table 3 Training data on LMIS

# of trained people under obj.9	Name of Training/Workshop	Trained		
		Males	Females	Total
9.1.2	LMIS trainings (FLD and SLD) for health providers responsible for management of anti-TB drugs in TB facilities (1 training in GBAO and 2 in Sughd region).	9	10	19
		9	9	18
		2	18	20
9.1.3	Refresher LMIS trainings including e-LMIS (FLD and SLD) for health providers responsible for management of anti-TB drugs in TB facilities	12	4	16
		8	6	14
9.1.4	Training of regional drug specialists on early warning system by using QuanTB	9	12	21
TOTAL # of trained under obj.9		49	59	108

Photo 2. Monitoring of drug warehouse, July 18, 2016, Penjakent TB District Center, Soghd Region
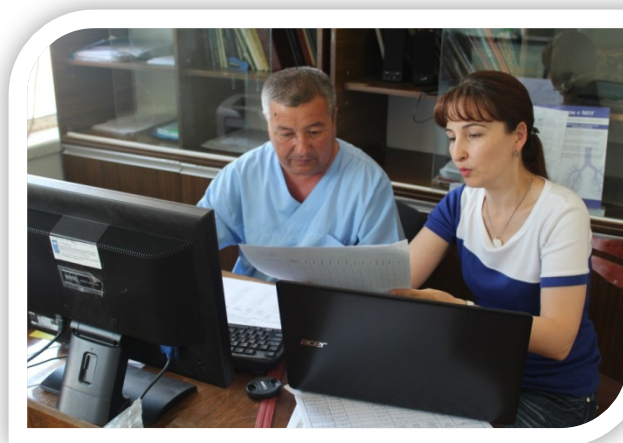
Photo 3. On-job-training on QuanTB, August 17, 2016, Degmai Regional TB Center, Soghd Region

Key Results
Table 4 Sub-objective 9. Drug and commodity management systems

#	Outcome Indicators	Indicator Definition	Baseline (Year/ timeframe)	Target	Result
	9.1.1. Number of stock outs of anti-TB drugs, by type (first and second line) and level (ex, national, provincial, district)	Description: This indicator should be used to report the number of stock outs of any type of TB drug at any level of the health system that results in interruption of treatment. Indicator Value: Number Level: This indicator should be reported at whatever level a stock out that results in interruption of treatment occurs.	2015	40	0

9.2.1. # of new and ancillary drug regimens that have become available in country since the start of Challenge TB	Description: The number of new and ancillary drug regimens that have become available in the country through Challenge TB support Indicator Value: Number Level: National	n/a	3	3 (1 shorter regimen, and 2 for pre- and XDR TB (1 with BDQ and 1 with DLM)

4. CTB Support to Global Fund Implementation

Current Global Fund TB Grants

Table 5 Current Global Fund TB Grants

Name of grant & principal recipient (i.e., Tuberculosis NFM - MoH)	Average Rating*	Current Rating	Total Approved/Signed Amount**	Total Committed Amount	Total Disbursed to Date
TJK-T-RCTC**	n/a	n/a	US$ 4,666,695	US$ 2,650,491	US$ 325,147
TJK-T-HOPE	A2	A2	US$13,249,973	US$10,505,287	US$5,660,590

Since January 2011
** *Current NFM grant not cumulative amount; this information can be found on GF website or ask in country if possible.*

In-country Global Fund status - key updates, current conditions, challenges and bottlenecks
The NFM officially commenced on January 1st, 2016 and nominated two Primary Recipients (PRs): the new PRs -the Republican TB Control Center and Project HOPE (PR of the R3, RCC grants). The start-up activities were delayed, particularly in RTBC because of challenging recruitment process and obtaining of license for procurement.

Despite these delays, CTB had several negotiations with Project HOPE on timely procurement and supply of SLDs since January 2016, the order was placed into GDF in June 07, 2016 only. Therefore, in Y2 CTB could not start enrollment of DR-TB patients into new regimens and expects to start it by the end of the year (December 2016). Currently the main concern of CTB is delayed supply of laboratory items (GeneXpert machines, laboratory consumables (test kits/strips GenoType MTBDRsl) that are under the RTBC in NFM TB grant. The delay was mainly due to challenges in agreements and disbursements of grants by GF, as well as new requirements for obtaining a procurement license. To overcome this challenge, the CTB project budgeted procurement of test consumables for SL LPA in APA3.

CTB involvement in GF support/implementation and any actions taken during Year 2
As mentioned above the new and repurposed drugs are planned to be procured through the NFM GF grant. CTB project was requested by NTP to support Project HOPE/ PR NFM GF in drug quantification for new regimens (shorter and regimens containing new drugs (BDQ)). CTB Tajikistan closely collaborated with Project HOPE as well as the NTP and USAID to follow up progress in procurement of anti-TB drugs including new drugs (BDQ) through the NFM grant. Several thematic working groups meetings conducted with involvement of NTP, GF and KNCV and appropriated decisions made on the drug ordering and timeframes. In June, the Project HOPE (PR/NFM GF project) developed drug order for three shipments: first accelerated shipment to be delivered by 1 September 2016 (Linezolid and Clofazimine), second by 5 December 2016 and third by 30 May 2017.

5. CTB Success Story

Introducing Drug Safety Monitoring in Tajikistan

Every year over 700 drug resistant TB cases are detected in Tajikistan and ten percent of them are extensively-drug resistant TB cases. To combat this increasingly dire situation, the country started to implement a drug resistant TB treatment program in 2009.

After many years without new anti-TB drugs, Bedaquiline and Delamanid have recently been approved for the treatment of patients whom key second line drugs are not effective and the Ministry of Health has approved a national plan on the introduction of these new drugs and shortened TB treatment regimens.

The USAID-funded Challenge TB project is supporting the introduction of these new drugs and regimens in the pilot sites of Dushanbe and Rudaky District. The implementation is in accordance with World Health Organization recommendations and is supported by other partner organizations involved in TB control. One of the most important components of national plan is the introduction of an active drug safety monitoring and management (aDSM) system. This system is essential as it allows to prevent any adverse reactions, quickly identify, record and manage them if they occurred. This approach will help to avoid interruptions in patients' treatment.

aDSM training participants, Dushanbe 2016

Treatment interruptions due to the adverse effect of drugs, especially DR-TB drugs are the most common reason patients give up on treatment, which further increases drug-resistance in the long run. aDSM is designed to decrease treatment interruptions and therefore increase the chances of treatment success.

The aDSM system regulations, including recording and reporting forms, standard operating procedures, have been developed and are ready for use. Three piloting sites for the introduction of the monitoring system have been identified: Dushanbe city TB Center, Rudaki district TB center and National TB, Pulmonology and Thoracic Surgery center, where conditions have been established for the implementation including the supply of equipment (ECG machines, audiometers) and staff training.

With the support of CTB, aDSM will be launched in December 2016, at the same time as the enrollment of DR-TB patients into new regimens will be started. The project is supporting the introduction of new drugs and new regimens and strengthening the NTP capacity in management of DR-TB cases through new technologies and interventions.

6. Operations Research

No operations research conducted in Year 2.

7. Key Challenges during Implementation and Actions to Overcome Them

Table 6 key challenges

Challenge	Actions to overcome challenges
Technical	
Dependency on other partners in terms of procurement of drugs. Initially, enrolment of patients on shorter drug regimen and regimens containing new drugs was planned to start in the project Year 2. Because of late start of NFM TB grant that is responsible for procurement of second line anti-TB drugs (including new and repurposed drugs), the drug order was placed in June 2016 only and the shipment to the country is expected in December 2016. It will postpone patients' enrolment till the end of December 2016.	CTB Tajikistan closely collaborated with PRs as well as the GF, NTP and USAID to follow up the progress in procurement of anti-TB drugs including new (BDQ) and repurposed drugs (Lzd, Cfz) through the NFM grant. Several thematic working groups meetings conducted with involvement of NTP, PR/NFM GF project (Project HOPE) and KNCV and appropriated decisions made on the drug ordering and timeframes. In June, Project HOPE (PR/NFM GF project) developed drug order for three shipments: first by 1st Sep 2016 (Linezolid and Clofazimine), second by 05 December 2016, and third by 30 May 2017.
Administrative	
Problems with banking system of Tajikistan due to economic crisis created unexpected risks for timely implementation of planned/scheduled activities.	KNCV branch office changed the bank AgroInvestBank and is making efforts to transfer the balance to the new bank (AmonatBank).

8. Lessons Learnt/ Next Steps

In the beginning CTB focused on two sub-objectives: Sub-obj. #3 (Patient centered care and treatment) and Sub-obj. #9 (Drug and Commodity Management Systems). However, during implementation, the project revealed additional challenges related to laboratory component and impact on introduction of new treatment regimens. In order to address these gaps, the CTB expanded its focus in the program and added new activities to strengthen laboratory service, in particular, activities that would improve and accelerate the process of new regimen implementation. The following activities were included into Y3 CTB Workplan: implementation of SL LPA testing, establishing of GXAlert system and optimization of Laboratory Information and Management System.

Initially CTB was designed with consideration of other partners' inputs. CTB activities were closely linked and tied to the progress of the NFM implementation. NFM TB grant planned support in funding costs of samples transportation, procurement and supply of TB drugs and laboratory consumables and equipment. However, NFM grant activities were delayed. The delay resulted in changing CTB initially planned activities. Lesson learnt to plan activities considering mitigation of risks and it should be less dependent from other factors. Therefore, these risks were taken into consideration by CTB in the planning of APA3, In example, CTB included funds for the procurement of SL-LPA test kits for pilot sites, while it was initially under NFM/GF. This will reduce risks of project implementation delays.

Similar lesson learned by CTB related to sputum transportation system. Within its work plan CTB developed SOPs for sample transportation system for two pilots and trained responsible staff. However, the established system was not functional because of funding delays by NFM GF (RTBC) for fuel. The CTB also included fuel costs into APA3 to reduce the implementation risks.

The number of pre-XDR and XDR-TB patients is increasing due to increased access to laboratory diagnosis. A small proportion of those patients have opportunities to be enrolled on new treatment regimens by MSF project and CTB. In order to improve epidemiological situation, the CTB project proposed to expand project coverage on five new districts in Y3. Thus, in next project year the CTB is planning to cover 2.662.651 population or 31,5% of the total population of the country.

Annex I: Year 2 Results on Mandatory Indicators as well as National Data on the Number of pre-/XDR-TB Cases Started on Bedaquiline or Delamanid

Table 7 Mandatory Indicators and National data

MANDATORY Indicators					
Please provide data for the following mandatory indicators:					
2.1.2 A current national TB laboratory operational plan exists and is used to prioritize, plan and implement interventions.	**National APA 2**	**CTB APA 2**	**CTB APA 2 investment**	**Additional Information/Comments**	**Notes**
Score as of September 30, 2016	0	N/A	**None**	There is no TB lab strategic plan developed in the country. There have been several intentions to draft this plan by different projects (Expand TB). The development of this plan will not be supported by CTB as this activity will be covered by another partner organization.	Provide relevant score in line with the indicator definition as presented in CTB M&E framework. Send a copy of current national TB laboratory operational plan to your PMU M&E Officer.
2.2.6 Number and percent of TB reference laboratories (national and intermediate) within the country implementing a TB-specific quality	**National APA 2**	**CTB APA 2**	**CTB APA 2 investment**	**Additional Information/Comments**	**Notes**

improvement program i.e. Laboratory Quality Management System					
Number and percent as of September 30, 2016	0	N/A	**None**	NRL was not assessed on LQMS standards	Under additional information, provide a score/rating for every reference laboratory implementing LQMS, either the "GLI Stepwise Process towards TB Laboratory Accreditation" (scoring = phase 1-4) or SLIPTA/SLMTA for TB (scoring=stars 1-5). (Reference: Laboratory Quality Management Systems Handbook; http://www.who.int/ihr/publications/lqms/en/)
2.2.7 Number of GLI-approved TB microscopy network standards met	**National APA 2**	**CTB APA 2**	**CTB APA 2 investment**	**Additional Information/Comments**	**Notes**
Number of standards met as of September 30, 2016	5	N/A	**None**	Standards met - 2, 3, 5, 6 and 11	This indicator measures whether or not a country has assessed and met the 11 GLI-approved standards for the TB microscopy network. Please send the completed CTB checklist assessing the fulfilment of the requirements for each standard to your PMU M&E Officer. In the additional comments column, provide a list of the standards (number only) that are met.
2.3.1 Percent of bacteriologically confirmed TB cases who are tested for drug resistance with a recorded result.	**National 2015**	**CTB 2015**	**CTB APA 2 investment**	**Additional Information/Comments**	**Notes**

Percent (new cases), include numerator/denominator	87.7% (2206/2516)	96.7% (379/392)	**Moderate**	The data for CTB pilots were verified and are reliable.	This indicator measures the percentage of bacteriologically confirmed TB cases that are tested for drug resistance and also have results recorded in the TB register (disaggregated by new and previously treated cases). Please note that drug resistance testing includes phenotypic (culture DST) and genotypic (molecular DST by GeneXpert, LPA or other molecular technologies).
Percent (previously treated cases), include numerator/denominator	15.3% (190/1242)	93.5% (101/108)		The national data are not verified (it is test-based data). The reason of low % of retreatment cases is probably the errors in recording of referral forms	
Percent (total cases), include numerator/denominator	63.8% (2396/3758)	96% (480/500)			
3.1.1. Number and percent of cases notified by setting (i.e. private sector, pharmacies, prisons, etc.) and/or population (i.e. gender, children, miners, urban slums, etc.) and/or case finding approach	**National APA2**	**CTB APA2**	**CTB APA 2 investment**	**Additional Information/Comments**	**Notes**
Number and percent	*Fill in data in "Ind 3.1.1 - APA 2" worksheet*	*Fill in data in "Ind 3.1.1 - APA 2" worksheet*	**None**		Please completed the separate worksheet "Ind.3.1.1 - APA2"
3.1.4. Number of RR-TB or MDR-TB cases notified	**National APA 2**	**CTB APA 2**	**CTB APA 2 investment**	**Additional Information/Comments**	**Notes**
Total 2015	682	130	**Moderate**		Number of laboratory-confirmed cases of rifampicin-resistant TB (RR-TB) or multidrug-resistant TB (MDR-TB) identified among all TB patients (pulmonary or extrapulmonary; new, previously treated or unknown treatment history).
Jan-Mar 2016	175	40			
Apr-June 2016	210	37			
Jul-Sept 2016	197	30			

To date in 2016	582	107			
3.2.1. Number and percent of TB cases successfully treated (all forms) by setting (i.e. private sector, pharmacies, prisons, etc.) and/or by population (i.e. gender, children, miners, urban slums, etc.).	**National 2014 cohort**	**CTB 2014 cohort**	**CTB APA 2 investment**	**Additional Information/Comments**	**Notes**
Number and percent of TB cases successfully treated in a calendar year cohort	Getting from WHO	**87.8% (713 out of 812)** 88.8% (435 out of 490) - Dushanbe, 86.3% (278 out of 322) – Rudaki district	**Substantial**		Under additional information (Column E), give disaggregated data by setting (i.e. private sector, pharmacies, prisons, etc.) and/or by population (gender, children, miners, urban slums, etc.) and/or risk population groups defined by national policy (IDUs, diabetics, prisoners, etc.). There may be overlap between settings and groups. Disaggregation by risk population is required in contexts where CTB is providing treatment support for a specific group according to the annual work plan or in contexts where operations research allows for disaggregation and comparison across groups.
3.2.4. Number of patients started on MDR-TB treatment	**National APA 2**	**CTB APA 2**	**CTB APA 2 investment**	**Additional Information/Comments**	**Notes**
Total 2015	682	130	**Substantial**	**National 2015: 682 out of 702 (97.2%) CTB 2015: 130 of 130 (100%)**	The number of bacteriologically confirmed, clinically diagnosed or unconfirmed MDR-TB cases started on second-line treatment during the reporting period. Unconfirmed MDR-TB cases are those awaiting C/DST results. RR-TB may fall under confirmed or
Jan-Mar 2016	175	40			
Apr-June 2016	210	37			
Jul-Sept 2016	197	30			
To date in 2016	582	107			

					unconfirmed depending on the country's MDR-TB diagnosis algorithm.
3.2.7. Number and percent of MDR-TB cases successfully treated	**National 2013 cohort**	**CTB 2013 cohort**	**CTB APA 2 investment**	**Additional Information/Comme nts**	**Notes**
Number and percent of MDR-TB cases successfully treated in a calendar year cohort	Getting from WHO	**61.5% (83 out of 135)** 65.1% (56 out of 86) - Dushanbe , 55.1% (27 out of 49) – Rudaki district	**Substantial**		The proportion of confirmed MDR-TB patients successfully treated (cured plus completed treatment) among those enrolled on second-line TB treatment during the calendar year. Under additional information (Column E), as applicable, give disaggregated data by HIV status, and XDR status. RR-TB may fall under confirmed MDR-TB depending on the country's MDR-TB diagnosis algorithm.
5.2.3. Number and % of health care workers diagnosed with TB during reporting period	**National 2015**	**CTB 2015**	**CTB APA 2 investment**	**Additional Information/Comme nts**	**Notes**
Number and percent reported annually	40 (0,07%) (31 PHC, 9 TB)	Dushanbe 0.03% (4 PHC, 0 TB) Rudaki 0.2% (0 PHC, 3 TB) Total: 0.05%	**None**		This indicator measures the percent of healthcare workers (HCWs) diagnosed with TB (all forms) annually (disaggregated by gender and age). This measurement may require a special study using a validated tool and/or methodology.

6.1.11. Number of children under the age of 5 years who initiate IPT	National 2015	CTB 2015	CTB APA 2 investment	Additional Information/Comments	Notes
Number reported annually	2271	Total CTB: 410 236 (Dushanbe) 174 (Rudaki)	**None**		The number of children under the age of 5 years who initiate isoniazid preventive therapy (IPT) during the reporting period.
7.2.3. % of activity budget covered by private sector cost share, by specific activity	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments	Notes
Percent as of September 30, 2016 (include numerator/denominator)	N/A	N/A	**None**		This indicator measures the proportion of CTB project activity budget covered by private sector cost share (if not monetary, will require estimation of costs) by specific activity.
8.1.3. Status of National Stop TB Partnerships	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments	Notes
Score as of September 30, 2016	2	N/A	**None**		Provide relevant score in line with the indicator definition as presented in CTB M&E framework. Please send a completed CTB questionnaire assessing the status of National Stop TB Partnership to your PMU M&E Officer.
8.1.4. % of local partners' operating budget covered by diverse non-USG funding sources	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments	Notes
Percent as of September 30, 2016 (include numerator/denominator)	N/A	N/A	**None**		This indicator measures the proportion of CTB project local partners' operating budgets covered by non-USG funding sources. Please send copies of completed special questionnaires with collected

					relevant country level data among CTB local partners to your PMU M&E Officer.

8.2.1. Global Fund grant rating	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments	Notes
Score as of September 30, 2016	Tuberculosis RCC, Project HOPE - A2 and Tuberculosis TFM, UNDP - A2	N/A	**None**		Provide the score for every active TB grant in country based on the following: A1 Exceeds expectations A Good performance A2 Meets expectations B1 Adequate B2 Inadequate but potential demonstrated C Unacceptable
9.1.1. Number of stock outs of anti-TB drugs, by type (first and second line) and level (ex, national, provincial, district)	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments	Notes
Number as of September 30, 2016	**0**	0	**Substantial**		This indicator should be used to report the number of stock-outs of any type of TB drug at any level of the health system that results in interruption of treatment.

10.1.4. Status of electronic recording and reporting system	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments	Notes
Score as of September 30, 2016	2		**None**	e-TB register operates in 28 sites, including 2 CTB (Dushanbe and Rudaki)	Provide relevant score in line with the indicator definition as presented in CTB M&E framework.
10.2.1. Standards and benchmarks to certify surveillance systems and vital registration for direct measurement of TB burden have been implemented	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments	Notes
Yes or No as of September 30, 2016	No	N/A	**None**		If assessed, please share a copy of the report/document assessing the status of relevant standards and benchmarks with your PMUE M&E Officer. In the additional comments column, include the country standards and benchmarks score (and year of completion) if an assessment was done.
10.2.6. % of operations research project funding provided to local partner (provide % for each OR project)	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments	Notes
Percent as of September 30, 2016 (include numerator/denominator)	N/A	N/A	**None**	In Y2 CTB Tajikistan is not supporting any operations research projects	This indicator measures the proportion of **CTB-supported** operations research project funding provided to local partner(s), by each OR project.

10.2.7. Operational research findings are used to change policy or practices (ex, change guidelines or implementation approach)	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments	Notes
Yes or No as of September 30, 2016	N/A	N/A	**None**		Under additional information (Column E), please present relevant information for each individual project. Please send relevant special reports with qualitative details to your PMU M&E Officer.

11.1.3. Number of health care workers trained, by gender and technical area	CTB APA 2		CTB APA 2 investment	Additional Information/Comments	Notes
			Substantial	The target was not achieved due to the fact that 1 training was canceled (act. 3.2.23, 20 participants), 10 participants from sites could not attend due to other urgent assignment	Please note that healthcare workers includes health facility staff, community health volunteers, laboratory staff, sputum transport technicians, and community-based DOTS workers. Below, please give disaggregated data by gender and sub-objective. Training includes any in-person, virtual, or on-the-job training that is longer than half a day and for which curriculum is available. This indicator is interchangeable with 'Number of individuals trained in any component of the WHO Stop/End TB Strategy with USG funding', which USAID missions may have as a requirement for internal agency reporting.
	# trained males APA 2	# trained females APA 2	Total # trained in APA 2	Total # planned trainees in APA 2	
1. Enabling environment			0		
2. Comprehensive, high quality diagnostics			0		
3. Patient-centered care and treatment	**110**	**118**	**228**	**245**	
4. Targeted screening for active TB			0		
5. Infection control			0		
6. Management of latent TB infection			0		

7. Political commitment and leadership			0		
8. Comprehensive partnerships and informed community involvement			0		
9. Drug and commodity management systems	49	59	108	120	
10. Quality data, surveillance and M&E			0		
11. Human resource development			0		
Other (explain)			0		
Other (explain)			0		
Grand Total	**159**	**177**	**336**	**365**	

11.1.5. % of USAID TB funding directed to local partners	National APA 2	CTB APA 2	CTB APA 2 investment	Additional Information/Comments	Notes
Percent as of September 30, 2016 (include numerator/denominator)	N/A	N/A	**None**	No local partners were involved in Y2	This indicator measures the proportion of CTB annual funding directed to local partners.

Year/Quarter	Number of pre-/XDR-TB cases started on BDQ nationwide	Number of pre-/XDR-TB cases started on DLM nationwide	CTB APA 2 investment	Additional Information/Comments	Notes
Total 2014	0	0	**Substantial**	Since 2015, 14 XDR TB patients (5 in 2015 and 9 in 2016) were enrolled into treatment with regimen containing Bdq under MSF project. Enrollment of XDR TB patients in frame of CTB will be started in December 2016.	The number of pre-XDR and XDR-TB patients started on bedaquiline/delamanid during the reporting period as a part of the patient's treatment regimen.
Total 2015	5	0			
Jan-Mar 2016	8	0			
Apr-Jun 2016	1	0			
Jul-Aug 2016	0	0			
To date in 2016	9	0			

Indicator 3.1.1

		Reporting period					CTB APA 2 investment	Additional Information/Comments	Notes
		Oct-Dec 2015	Jan-Mar 2016	Apr-Jun 2016	Jul-Sept 2016	Cumulative Year 2			
Overall CTB geographic areas	TB cases (all forms) notified per CTB geographic area *(List each CTB area below - i.e. Province name)*						None	The number of TB cases notified for July-September 2016 is preliminary and will be finalized upon verification of data by NTP which takes 2 to 3 months.	Please fill in all applicable data that are available at the time of reporting. If not feasible to provide denominators and calculate percentages for all interventions, the numerator is important in and of itself. In B6-B13 cells, list all geographic areas CTB works in (i.e. Province, district, region names). Please use/add as many rows as needed. If CTB doesn't have a specific geographic areas (i.e. national level only), write 'National'. Then, the 'denominator' is the only row that applies. For each geographic area, under the corresponding reporting period column, fill in the # of TB cases (all forms) notified. C14-G14 cells should be the sum of the individual geographic areas above.
	Dushanbe	112	158	177	137	584			
	Rudaki	83	103	108	85	379			
						0			
						0			
						0			
						0			
						0			
						0			
	TB cases (all forms) notified for all CTB areas	195	261	285	222	963			
	All TB cases (all forms) notified nationwide (denominator)	1392	1559	1867	1554	6372			
	% of national cases notified in CTB geographic areas	14%	17%	15%	14%	15%			

Annex II: Status of EMMP activities

Table 8 EMMP activities

Year 2 Mitigation Measures	Status of Mitigation Measures	Outstanding issues to address in Year 3	Additional Remarks
1. Education, technical assistance, training, etc.	No environmental impacts anticipated as a result of these activities.	N/A	
2. Public health commodities	This category of activity is not included in Y2 Work plan	N/A	
3. Medical waste	This category of activity is not included in Y2 Work plan	N/A	
4. Small-scale construction	This category of activity is not included in Y2 Work plan	N/A	
5. Small-scale water and sanitation	This category of activity is not included in Y2 Work plan	N/A	